Implementation and Restraints of Ratio Analysis of Financial Reports in Financial Decision Making

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Financial ratios are used to compare the financial performance of companies during the period and comparisons between companies, focusing on similarities, differences and trends. They are used by managers, financial analysts, appraisers, regulators, investors, creditors and others. As a managerial technique, the ratio analysis has a very wide application, but also certain restraints, hence the results obtained should be interpreted carefully, in order that they should serve as a basis for evaluating financial performance and decision making.

1. Introduction

A permanent challenge facing managers, consultants and financial analysts is how to *harmonize the functional activity and discipline* and at the same time, *provide support to corporate strategy*.

Significant evolutionary changes towards creating a more modern company, in line with the changes caused by the market globalization, internationalization of business, the development of information technologies and especially a competitive economic environment characterise the present period. Continual interactions with the events both within and without the company are the major reason that an anlysis of the quality of financial reporting is necessary. The management of the business entity is legally responsible for a valid and objective reporting of the financial position, the business results and the changes in the financial position of the business entity that is being reported about.

2. Management accounting and decision making

The accounting system is a vital component of the company's information system. The major goal of accounting is to provide information useful in decision making. Hence accountants are expected to identify the requirements of the users of financial information, on one hand, and the types of decisions, on the other [1][2]. Financial reports are actually designed for general use, that is, they are not specific of one target group of users.

The *decision-making process* generally consists of the following steps:

1. Identifying different alternatives for given types of decisions;
2. Integrating necessary data for different alternatives;
3. Analysis and anticipation of the consequences of each alternative,
4. Selection of the alternative that points to and helps achieve the desired goals;
5. Implementation of selected alternatives;
6. Evaluation of the results of the business decisions against standards or other desired results in regular intevals.

The tools of managerial decision making are the following:

1. Alternative business decision making;
2. Flexible budgeting and variant analysis;
3. Capital budgeting;
4. Incremental analysis;
5. Analysis of relations among costs, scope and profits;
6. Analysis of returns on investments, quantitative analysis;
7. Analysis of cost flows;
8. Safety of shares – statistical testing, etc.

Financial analysis incorporates the following segments:

1. Basic financial reports;
2. Strategic and tactical decisions;
3. Management accounting techniques;
4. Information required in decision making.

3. Financial reporting

Financial reports present the picture of the financial standing and the financial results achieved by an economic entity.

In this country, the annual settlement for small and large companies includes:

- balance sheet;
- income statement;

– cash flow report;
report on capital turns;
– notes accompanying financial reports;
– statistical annex [12].

A general structure of the report for the needs of financial analysis is presented as follows:

1. Revenues from sales;
2. Correction (change) in the value of stocks;
3. Other incomes;
4. Expenditure of direct materials and goods;
5. **Gross margin/Profits I** 1±2+ –4;
6. Other business expenditures;
7. **Earnings before interest, taxes, depreciation and amortization (EBITDA *Profits II)** 5–6
8. Depreciation and amortization;
9. **Earnings before interest and taxes (EBIT *Profits III)** 7–8
10. Financial revenues
11. Financial expenditures
12. Non-operating/special revenues
13. Non-operating/special expenses
14. Non-operating and other results 9 + 10 – 11 + 12 – 13
15. **Earnings before tax (EBT)** – 13 – 14
16. Allignments of accounting profits against national tax regulations 15±16
17. Taxes (10%) – 10% of the amount of position 16
18. **Earnings after tax (EAT)** 16 – 17

Earnings before tax are viewed as accounting profits from which income tax is paid, however, it is necessary that they be corrected in accordance with the Law on income taxes, after which they become a valid basis for income tax calculation. To establish a taxable income, expenses are acknowledged in the amounts defined in the income statement, in accordance with the MRS and the regulations in the area of accounting, with the exception of expenses for which the law provides another method of regulation [5]. Dividends or earnings are paid out of the net profits, while one portion is retained in the company as retained earnings.

The report on the overall results for applying the total expence method is to disclose the following positions:

- Earnings and expences from current activities;
- Earnings and expenses affecting capital directly upon creation;
- Overall results over the given period;
- Profits pertaining to majority owners;
- Profits pertaining to minority owners;
- Earnings per share;
- Other important information.

The manager has to pay attention to cash flow as much as to profits. Namely, profits are not equal to cash flow, that is, the facts that the company earns profits does not ensure that the cash flow within it will be enough to maintain solvency.

The report on cash flows is a financial report that shows where the cash comes from (cash inflows) and how it is employed (cash outflows) for a given period, as well as what the cash balance turn was during the period – the net cash flow. It is the major source of information used in operational decision making concerning cash flow management, financial solvency control, as well as in interpreting the discrepancies between the financial results and the changes in cash amounts.

The analysis of financial reports is primarily focused upon the data presented in external reports, including additional ones. The task of the analysis is to identify the major turns or key points in trends, amounts and relations between financial reports which are predominantly a sum of detailed financial information. The analysis of financial reports is an evaluation method determined by the company's past, current and projected performance.

The company management decides:

- Which accounting methods will be implemented;
- Which information will be presented in the notes following financial reports;
- Which accounting assessments will be conducted;
- Which events or transactions will be acknowledged;
- Other important information.

The quantity and quality of notes are part of managerial decisions of the company concerning:

- The events they chose to present as important;
- The number of notes that will be presented in a balance position as regards the MRS/MSFI requirements, i.e., to which extent the report will go in view of details;
- Conditioned liabilities (contracted or future liabilities);
- Financial forecasts – *Management Discussion and Analysis*.

The implementation of international standards of financial reporting improves the quality and comparability of financial reports; hence it promotes the consistency and reliability in financial reporting and makes it easier for the companies to raise capital at international market. The IFRS (IAS) standards [7][8] present a global model of financial reports standardization. They serve to coordinate different accounting aproaches, methods and notes in order to bring into accord the current accounting practice and the requirements of the global financial market, as well as specificalities in national legislatures, especially in the domain of tax systems harmonization, in the function ensuring the preconditions for the positive flow of economic development.

The accounting policies are tools for business policy execution. The selected accounting policies affect the balance sheet positions and, accordingly, the quality of financial reports and they are harmonized with the International Financial Reporting Standards (IFRS). It is necessary that, once adopted, the accounting policy be implemented consistently, and any deviations in the sense of change be tolerated in cases stipulated by law or by the body that administers the accounting standards, as well as in case the change would result in a more realictic presentation of positions. The companies that provide a detailed accounting disclosure tend to be larger, have a higher growth potential and use more loaned than own capital to finance their business operations. Detailed accounting disclosures can also reduce any uncertainty related to the accounting practices of the companies and financial decision making, and thus facilitate the expansion of companies and improve their growth potential.

The function of accounting disclosure is to reduce the overall risk of the companies and consequently make it easier for them to raise the required capital in exchange markets which trade in shares and debt securities.

4. Financial ratio analysis as management technique

The analysis of financial information or the financial analysis means an analytical interpretation of available information contained primarily in the company balance sheet and income statement, as well as in specially created reports on financial flows. This information allows for an insight into the current financial position of the company. The insight into the financial position of the company is in turn the basis for making a host of different decisions, e.g., the decision on granting a loan to the company whose financial standing is analysed and assessed, aproval of issuing of securities of the companies, a possible need of the company to extend its business activities and engagement of additional funds from available sources, etc.

The ratio analysis is based on the study of various relations between logically related balance sheet items, including other information [9]. The title "ratio" is an English word and means "relation", therefore the ratio figures in the financial analysis show a relationship between two functionally related balance sheet positions. The basic purpose of ratio figures is to ensure the assessment of the company financial standing, as well as the trend towards the change in the financial standing of the company. The ratio analysis is based on the DuPont model (*Du Pont Model*, devised by *F. Donaldson Brown*) – Illustration no.1. This model is actually the most frequently used model to illustrate the relations between profitability factors and ovaerall investments.

The required financial information may be presented in a number of forms, however, it includes the usual comparisons such as: comparisons of the same item for the company over a period of several years, comparison of the most important relationships within the same year, or comparisons of several companies that do business in the same industry (those that are comparable).

The review of the ratio is presented in the following illustration:

Factor	**Account**
Property turnover	Earnings/average property
Profitability	Earnings before interest and taxes/earnings
Interest rate burden	Earnings before interest and taxes – Expenses from interest/short -term liabilities
	Average income/average capital
Leverage	Tax expenses (Earnings before taxes – Expenses from interest)
Efficiency in taxing	
Name of ratio	**Definition**
Solvency/Liquidity	
Net working capital	Current assets – Short-term liabilities
Current solvency ratio	Current assets/Short -term liabilities
Quick solvency ratio	Cash+Marketable securities+receivables/Short -term liabilities
Cash ratio	Cash/Short-term liabilities
Cash burden rate	Current assets/Average daily operations expenses

Factor	Account
Solvency	
Indebtedness ratio	Aggregate liabilities/Aggregate assets
Debt-capital relation ratio	Aggregate liabilities/Equity capital
Earnings on interest ratio	
(number of times)	Earnings before interest and taxes/Expenses from interest
Cash coverage ratio	
	Earnings before interest, taxes and amortization (depreciation)/Interests
Free cash flow	Cash dividends
Profitability	Gross profits/Net income
Gross profit margins	Net profits/N et earnings
Profit margins	Net profits/Average total assets
Returns on total assets	Earnings available to owners of common stocks/Average equity capital*
Returns on capital	*(Equity capital at the beginning of reporting period+Equity capital at the end of the reporting period)/2
Market value	
Earnings per share	(Net profit – Preferential dividends)/ **Declared common shares** **
	**Weighted average number of common shares
Cost and earning ratio	Market price per share/Earnings per share
Market added value	Market price of firm's shares – Own capital distributed by shareholders
	Dividends per share/Market price per share
Divident returns on	
shares	Dividends on common shares/Net profit – Preferential dividends
Dividend payment ratio	
Turnover of property	
Liability turnover	Net sales on credit/Average receivables from customers*
	*(Receivables at the beginning of reporting period+Receivables at the end of reporting period)/2
Average period	365 days/Receivables turnover
Stocks turnover	Net sales/Average stocks**
	**Stocks at th e beginning of reporting period+ Stocks at the end of reporting period/2
	365 days/Stocks turnover
Average age o f stocks	Net earnings/Average total assets***
Total assets turnover	***(Total assets at the beginning of reporting period+Total assets at the end of reporting period)/2
Business risk	
Operational earnings variant coefficient	Standard deviation of earnings before interest and taxes/average earnings before interest and taxes
Sales volatility coefficient	Standard deviation of sales/Average sales
Operational leverage level	
	Percentage of chan ge in earnings before interest and taxes/Percentage of sales

The analysis of financial reports allows for "reading" financial reports to a large group of users. Financial reports are of primary importance for managerial assessment of the company results.

The Ratio analysis is useful in:
- Evaluation of performance;
- Environment analysis;
- Disclosure of the relation between activities and performance;
- Benchmarking with the company's previous period
- Benchmarking with the industry (average, leader in the branch)
- Implementation of *Altman Z-score* test to test a likelihood of the company bankruptcy;
- Forecasting the sustainable growth of the company; forecasting the future values and growth of earnings;
- Turnover forecasting.

Often implemented in the procedure of financial analysis are the ratio figures with the model known as *Altman Z-score test*, developed in 1968 by *Edward Altman* for bancruptcy predictability. The obtained results of this test are compared to the already set standards and assess the condition the company is at the moment. The *Altman Z-score test*, however, has certain weaknesses in that it cannot abstract accounting errors, and also in that it neglects the cash flow indicators, since the fact that profitiability flows and cash flows do not always coincide should not be neglected. This test should be implemented as a supplement to the financial analysis and interpreted with ultimate caution.

Another model that can be used in success or failure assessment is the Arghentie model of failure forcast. In Croatia, a BEX index is used as the business success indicator [13].

5. Quality of financial information and restraints in the ratio analysis implementation

Financial reporting contributes to raising transparency of the capital market processes, of investors' interests protection, and to raising the safety level in the decision-making process. [10] [11]. As such, it plays a highly important role in the processes of mitigating information assymetry and maintenance of the financial system stability. On the other hand, the complexity of business transactions, the need for the presence of accounting options, an unethical conduct of of the participants in the reporting process etc., result in information in financial reporting often being far from economic reality. The possible consequences of such reporting for the company, investors, financial markets and the accounting profession require that these issues be paid utmost attention both at the institutional level, in terms of supplying a desired quality, and on the level of finding a means for as reliable analysis of the quality of individual financial reports as possible. The assessment of the quality of financial reports requires the ability to identify information risks and this entails a broad range of accounting knowledge, the knowledge of specific features of different industries, groups, branches and individual companies, identification of business situations suitable for creative reporting as well as high analytical capability that even exceedes the requirements of the standard traditional analysis of financial reports.

The credibility of reported facts is of great importance for both internal and external users of financial reports. The implementation of international financial reporting standards improves the quality and comparability of financial reports; hence it promotes consistency and reliability in financial reporting and makes it easier for companies to raise capital on an international level.

An important factor in improving the credibility of accounting information in financial reports is auditing. Auditing is a procedure of independent control of financial reports concerning one business entity – profit oriented, to form an opinion on it.

Once there were the "Big Five", i.e., five auditing firms, and among the most successful was the *Arthur Andersen* firm. The firm was most highly reputed among the big five, nevertheless, its reputation was damaged by the well known affair concerning the world energy supply giant *Enron* whose accounting, i.e., auditing was entrusted to the *Arthur Andersen* firm. While *Enron* was recording a fall in profits of 75% in 1997, the accounting reports drew a highly favourable picture of the company [3][6]. The enormous losses *Enron* suffered were presented in illegible footnotes hardly anybody noticed. The fall of Enron resulted into the fall of the *Arthur Andersen* auditing firm too, because they lost the licence to practice auditing on permanent basis and had to pay enormous fines for having verified false accounts and covered up evidence. The affair with *Enron* simply damaged the reputation of corporate America and it logically resulted in a new law – *Sarabanes Oxley Act*, as promptly as 2002.

In the companies that are not subject to auditing, the quality of accounting information will depend on the management responsibility and the professional responsibility of the employees in the accounting department in charge of business bookkeeping and creating annual reports.

The restraints in the implementation of the financial ratio analysis:

- Industry of the company is often difficult to identify;
- Accounting practices differ from one company to another, which may distort the value of the ratio;
- Deviations in the ratios in certain cases are difficult to define;
- Industry ratios may not be the desired targets;
- Published processes of industries are only "guidelines", i.e., they are approximative in character;
- Seasonal effects on ratios;
- Incompleteness of ratios.

In addition to the above listed, restrains are the following:

- Numerous large corporations maintain manifold business relations, hence it is difficult to identify the industry group the firm belongs to. A comparison of the ratio with the ratio values of other corporations may prove negligible;
- Financial reports are characterised by the implementation of historical costs where the effects of inflation are neglected;

- Ratios are static and they do not take into consideration the future trends, hence the assessment of the financial standing on the balance day and of the success in a given year can be useful only for conclusions concerning that particular period.
- Managers can sometimes exaggerate in presenting their financial figures, etc.

Conclusion

The trust in financial reports includes, among other things, educated accountants, standardized bases, harmonized principles, transparent and reliable data in financial reporting. The international standards of financial reporting allow for a higher safety of the investor in view of the capital flow on the global level. The implementation of international accounting standards from the aspect of performance measuring of the company management is very important, because it is their performance that conditions the price of their shares.

The ratios of the companies' financial standing are widely used throughout the world, especially in the countries characterised by a developed market economy.

Specially important in an adequate assessment of financial and earning position of companies is the skill of financial analysts in interpreting the obtained figures – results. They are required (expected) to be well acquainted with the industry-specific conditions, as well as with any important characteristics of the business of the observed company. Figures themselves do not tell much.

The techniques of analysis are various due to various users, their different levels of knowledge, the variety of information necessary for decision making as well as due to the general nature of financial reports.

Financial reports are highly important for the managerial communication of results of the company to investors, creditors and analysts. The financial analysis allows for reports to be read by a large group of users for the purpose of assessment of the business of a certain company, as well as making various types of business decisions.

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